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Filed 05/10/2001

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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**In the Claims:**

**Claim 21 has been cancelled.**

**Claims 10, 16, 20 and 22 are amended as follows:**

10. (Twice Amended) A[n] flexible, integral replacement pad/trace structure for repair or modification of a printed circuit board comprising:

a first end having shape and dimensions to serve as a replacement contact pad for a predetermined contact pad to be replaced on a printed circuit board;

a second end having shape and dimensions predetermined to connect to a desired electrical contact on a printed circuit board; and

a trace portion integral with and connecting said first and second ends and having shape and dimensions predetermined to interface to the circuit geometry of the printed circuit board between the predetermined replaced contact pad and predetermined electrical contact, said trace portion connected to a central region of said first end and having clearance areas between said trace portion and said first end such that said trace portion is orthogonal and concentric to said first end and wherein said integral replacement pad/trace structure comprises an electrically conductive and flexible material.

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16. (Twice Amended) The replacement structure of claim 10, further comprising an [outer] inner insulating layer on at least a portion of said trace portion.

20. (Amended) A printed circuit board repair structure comprising:

a printed circuit board having at least one layer;

at least one electrical contact pad on a first surface of said printed circuit board;

at least one conductive through hole electrically connecting said at least one electrical contact pad to one of at least one electrical connection on a second surface of said printed circuit board or said at least one layer of said printed circuit board, said at least one conductive through hole centered on said at least one electrical contact pad;

at least one replacement repair hole centered on said at least one electrical contact pad and having a diameter sufficient to sever all internal connections of said at least one conductive through hole that said at least one replacement repair hole replaces; and

at least one flexible, integral replacement pad/trace structure having a first end replacing said at least one electrical contact pad and centered on said at least one replacement repair hole, a second end electrically connected to said at least one electrical connection, and a trace portion connecting said first and second end, said trace portion connected to a central region of said first end and having clearance areas between said trace portion and said first end such that said trace portion is orthogonal and concentric to said first end, wherein said at least one integral replacement pad/trace structure comprises an electrically conductive material and passes through at least a portion of said at least one replacement repair hole thereby providing a replacement electrical connection on said printed circuit board.

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22. (Amended) The printed circuit board repair structure of claim 20 [21] wherein said at least one replacement repair hole further comprises an insulating material surrounding the side walls of said at least one replacement repair hole forming a second smaller diameter providing electrical insulation for said at least one integral replacement pad/trace structure.

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